CLAIMS:

1.   Hollow nanoparticles that comprise particle-forming first proteins, containing a bio-recognizing molecule for recognizing a specific cell, wherein at least one of the first proteins interacts with a second protein forming a capsid structure.

2.   The hollow nanoparticles as set forth in claim 1, wherein the first protein comprises a hepatitis B virus surface-antigen protein.

3.   The hollow nanoparticles as set forth in claim 2, wherein the first protein comprises a hepatitis B virus surface-antigen protein whose hepatocyte recognition site is modified to another bio-recognizing molecule.

4.   The hollow nanoparticles as set forth in claim 3, wherein the first protein comprises a hepatitis B virus surface-antigen protein whose hepatocyte recognition site is modified to a beta-cellulin or a basic fibroblast growth factor.

5.   The hollow nanoparticles as set forth in claims 1 through 4, wherein the second protein comprises a hepatitis B virus core-antigen protein.

6.   The hollow nanoparticles as set forth in claims 1 through 5, wherein the hollow nanoparticles are formed by transferring a gene encoding the first protein and a gene encoding the second protein to a single eukaryotic cell by separate vectors, so that the respective genes are coexpressed in the eukaryotic cell.

7. The hollow nanoparticles as set forth in claim 6, wherein the eukaryotic cell is a yeast cell.

8. The hollow nanoparticles as set forth in claim 6 or 7, wherein the gene encoding the second protein is transferred by a vector having an Aureobasidin A-sensitive gene.

9. A drug that is made of the hollow nanoparticles as set form in any one of claims 1 through 8, wherein a target cell substance is encapsulated in the hollow nanoparticles.

10. A disease treating method using the drug as set forth in claim 8.